

Claims 1, 12, 24 and 27 have been amended. A marked copy of the amended claims may be found in Appendix A.

Claims 1-28 are presented for reconsideration. A clean copy of the currently pending claims may be found in Appendix B.

REMARKS

Claims 1 and 24 have been amended by incorporating the limitation of high curl retention. Descriptive basis may be found in original claims 12 and 27 as well as in the specification. Dependent claims 12 and 27 have been amended to remove the language added to the independent claims.

Claims 1-11, 13-17, and 21-22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Sajic, et al. (US 6,017,860). Sajic discloses a 3-in-1 shampoo; that is, a shampoo intended to wash, condition, and style hair. Such composition may optionally contain xanthan gum as a swellable polymeric thickening agent. See column 6, lines 47-53. Thus, the xanthan gum is added as a thickener for the shampoo, not as a hair fixative as in the current application.

This difference is emphasized by the mechanism of the shampoo and the examples. Starting at column 6, line 56, the shampoo mechanism is described in which it is stated that upon solubilization of the shampoo, the viscosity decreases (as the xanthan gum is water soluble, it washes away), releasing the surfactant monomers and anionic styling polymer to form a styling/conditioning polymer which adheres/attracts to the hair.

That the xanthan gum is washed away is also evidenced by the examples which do not contain "styling polymers," but contain xanthan, have very poor styling. For example, formulation 17 contains 1.0% xanthan, but no "styling polymer" and has "very poor" styling properties. In comparison, comparative formulations 18-20 have good to excellent styling properties.

The Examiner responded that a "recitation of the intended use of the claimed invention must result in a structural difference" such that if "the prior

art structure is capable of performing the intended use, then it meets the claim.”

Applicants submit that the xanthan gum present in the compositions of Sanjic would not fix hair such that it would exhibit at least 80% curl retention in view of the other ingredients present. To support such claim, Applicants respectfully request that the enclosed declaration under Rule 132 (37 C.F.R. §1.132) of Dr. John Leighton be entered. Dr. Leighton has extensively worked in the area of cosmetic products, particularly hair fixatives. Under Dr. Leighton’s supervision and guidance, Formulation 17 of Sanjic was prepared and compared to the composition of the present application. The experiment shows that the formulation of Sanjic has only 46% curl retention. In contrast, the presently claimed compositions have over 80% curl retention as evidenced in Example 3 of the present application.

Claims 1-4, 7-8, 10-11, 15, and 18-19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by JP 11-236310. JP 11-236310 discloses using specific heat-treated xanthan gums to provide cosmetics with excellent stability and feel (ie. non-greasy, non-sticky). The application does not exemplify the use of heat-treated xanthan gums in hair fixative compositions nor discloses that such xanthan would provide the fixative property or curl retention, claimed by the present invention.

The Examiner states that a “recitation of the intended use of the claimed invention must result in a structural difference” such that if “the prior art structure is capable of performing the intended use, then it meets the claim.”

Applicants submit that the xanthan gum present in the compositions of this prior art would not fix hair such that it would exhibit at least 80% curl retention in view of the other ingredients present. To support such claim, Example 3 of JP 11-236310 was prepared and compared to the composition of the present application (see the enclosed Leighton Declaration). The experiment shows that the formulation of JP 11-236310 has only 34% curl retention. In contrast, the presently claimed compositions have over 80% curl

retention as evidenced in Example 3 of the present application. Thus, it is clear that JP 11-236310 does not teach the use of xanthan gum in a hair fixative composition.

Claims 5, 6, and 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 11-236310. As detailed above, this reference does not teach or suggest the use of xanthan gum in a hair fixative composition and the rejection has been overcome. Applicants neither admit nor deny the Examiner's statements.

Claims 1-22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 11-236310 in view of Sajic, et al. (US 6,017,860). As detailed above, Sajic does not teach a composition which, in its intended mode of use, contains a hair fixative amount of xanthan gum.

The Examiner states Sajic teaches the anionic polymers and swellable thickening polymers are styling aids at column 6, lines 1-30. Applicants respectfully disagree and request the Examiner to point out exactly where in these lines such is disclosed. What is taught is that anionic polymers and their alkali metal salts are styling aides; not that swellable polymer thickening agents are styling aides. The reference indicates that the swellable polymer thickening agents can be used with the anionic styling polymers, not that the thickening agent is also the styling agent. The reference teaches in column 6, lines 24-31 that the thickening polymer is used to stabilize the anionic styling polymer in the formula, not that the thickening agent is giving the styling benefit.

Claims 24-28 have been rejected under 35 U.S.C. §103(a) as being unpatentable over JP 11-236310 in combination with Sajic, et al. (US 6,017,860) in view of Bhatt, et al. (US 6,113,881). As addressed above, neither Sajic nor JP 11-236310 teach compositions that meet the presently claimed compositions in that the amount of xanthan present is not in a fixative effective amount. The addition of Bhatt does not cure this deficiency. Further as stated by the Examiner, Bhatt discloses surfactant-free mousses, which contain resin fixatives. In contrast, claims 24-28 of the present invention

disclose compositions in which the fixative consists essentially of xanthan gum.

The Examiner alleges that the claim language of "consisting essentially of" is inconsistent with the specification as the examples contain fixative polymers. Applicants agree that some examples contain other fixative polymers, but not all. For example, formulas 12-15 contain no fixatives other than xanthan gum.

In view of the foregoing, Applicant submits the Application is now in condition for allowance and respectfully requests early notice to that effect.

Respectfully submitted,



National Starch and Chemical Company
P.O. Box 6500
Bridgewater, NJ 08807-0500
(908) 575-6152

Karen G. Kaiser
Attorney for Applicants
Reg. No. 33,506

Dated: 4 Mar 03

Appendix A

(marked copy of amended claims)

1. A hair cosmetic composition comprising a fixative effective amount of xanthan gum,
wherein the composition has a high humidity curl retention of at least about 80%.
- 5 2. The composition of claim 1, wherein the xanthan gum has been heat treated at a
moisture content of less than about 25%, a temperature of at least about 60°C for at
least about 30 minutes.
3. The composition of claim 2, wherein the temperature is at least 100°C.
4. The composition of claim 3, wherein the temperature is at least 105°C.
- 10 5. The composition of claim 2, wherein the moisture content is less than about 8%.
6. The composition of claim 3, wherein the moisture content is less than about 1%.
7. The composition of claim 2, wherein the heat treatment is for at least about one hour.
8. The composition of claim 3, wherein the heat treatment is for at least about 2.5 hours.
9. The composition of claim 2, wherein the heat treatment is at a moisture of less than
15 about 1% and the temperature is at least about 105°C for at least about 2.5 hours.
10. The composition of claim 1, wherein the composition is selected from the group
consisting of a spray, a mousse, a hair lotion, a cream, a pomade, and a gel.
11. The composition of claim 10, wherein the composition is a gel.
12. The composition of claim 1 characterized by a viscosity of at least about 8000 cps, a
20 ~~high humidity curl retention of at least about 80%~~ and a turbidity of no more than about
100 NTU (Nephelometric Turbidity Units).
13. The composition of claim 1, further comprising a second fixative polymer.

14. The composition of claim 13 wherein the second fixative polymer is selected from the group consisting of acrylates copolymer, octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer, acrylates/octylacrylamide copolymer, VA/crotonates/vinyl Neodecanoate copolymer, poly(N-vinyl acetamide), poly(N-vinyl formamide),
5 polyurethane, corn starch modified, sodium polystyrene sulfonate, polyquaternium-4, polyquaternium-10 and polyurethane/acrylates copolymer.
15. The composition of claim 2, wherein the composition is a gel.
16. The composition of claim 16 further comprising a second fixative polymer.
17. The composition of claim 17 wherein the second fixative polymer is selected from the
10 group consisting of acrylates copolymer, octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer, acrylates/octylacrylamide copolymer, VA/crotonates/vinyl Neodecanoate copolymer, poly(N-vinyl acetamide), poly(N-vinyl formamide), polyurethane, corn starch modified, sodium polystyrene sulfonate, polyquaternium-4, polyquaternium-10 and polyurethane/acrylates copolymer.
- 15 18. A method of preparing the composition of claim 1, comprising dispersing the xanthan gum in water; and mixing in other hair cosmetic components.
19. A method of preparing the composition of claim 2, comprising dispersing the xanthan gum in water; and mixing in other hair cosmetic components.
20. A method of preparing the composition of claim 17 comprising dispersing the xanthan
20 gum in water; and mixing in other hair cosmetic components.
21. A method of providing fixative properties to the hair comprising applying the composition of claim 1.
22. A method of providing curl retention under high humidity conditions comprising applying the composition of claim 1.
- 25 23. The composition of claim 1, wherein the composition is a surfactant-free hair mousse.
24. A hair cosmetic composition, wherein the fixative consists essentially of a xanthan gum and a high humidity curl retention of at least about 80%.

25. The composition of claim 24, wherein the composition is selected from the group consisting of a spray, a mousse, a hair lotion, a cream, a pomade, and a gel.
26. The composition of claim 25, wherein the composition is a gel.
27. The composition of claim 24 characterized by a viscosity of at least about 8000 cps, a
5 ~~high humidity curl retention of at least about 80% and a turbidity of no more than about~~
100 NTU (Nephelometric Turbidity Units).
28. The composition of claim 24, wherein the composition is a surfactant-free hair mousse.

Appendix B

(clean copy of pending claims)

1. A hair cosmetic composition comprising a fixative effective amount of xanthan gum, wherein the composition has a high humidity curl retention of at least about 80%.
- 5 2. The composition of claim 1, wherein the xanthan gum has been heat treated at a moisture content of less than about 25%, a temperature of at least about 60°C for at least about 30 minutes.
3. The composition of claim 2, wherein the temperature is at least 100°C.
4. The composition of claim 3, wherein the temperature is at least 105°C.
- 10 5. The composition of claim 2, wherein the moisture content is less than about 8%.
6. The composition of claim 3, wherein the moisture content is less than about 1%.
7. The composition of claim 2, wherein the heat treatment is for at least about one hour.
8. The composition of claim 3, wherein the heat treatment is for at least about 2.5 hours.
9. The composition of claim 2, wherein the heat treatment is at a moisture of less than
15 about 1% and the temperature is at least about 105°C for at least about 2.5 hours.
10. The composition of claim 1, wherein the composition is selected from the group consisting of a spray, a mousse, a hair lotion, a cream, a pomade, and a gel.
11. The composition of claim 10, wherein the composition is a gel.
12. The composition of claim 1 characterized by a viscosity of at least about 8000 cps, and
20 a turbidity of no more than about 100 NTU (Nephelometric Turbidity Units).
13. The composition of claim 1, further comprising a second fixative polymer.

14. The composition of claim 13 wherein the second fixative polymer is selected from the group consisting of acrylates copolymer, octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer, acrylates/octylacrylamide copolymer, VA/crotonates/vinyl Neodecanoate copolymer, poly(N-vinyl acetamide), poly(N-vinyl formamide),
5 polyurethane, corn starch modified, sodium polystyrene sulfonate, polyquaternium-4, polyquaternium-10 and polyurethane/acrylates copolymer.
15. The composition of claim 2, wherein the composition is a gel.
16. The composition of claim 16 further comprising a second fixative polymer.
17. The composition of claim 17 wherein the second fixative polymer is selected from the
10 group consisting of acrylates copolymer, octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer, acrylates/octylacrylamide copolymer, VA/crotonates/vinyl Neodecanoate copolymer, poly(N-vinyl acetamide), poly(N-vinyl formamide), polyurethane, corn starch modified, sodium polystyrene sulfonate, polyquaternium-4, polyquaternium-10 and polyurethane/acrylates copolymer.
- 15 18. A method of preparing the composition of claim 1, comprising dispersing the xanthan gum in water; and mixing in other hair cosmetic components.
19. A method of preparing the composition of claim 2, comprising dispersing the xanthan gum in water; and mixing in other hair cosmetic components.
20. A method of preparing the composition of claim 17 comprising dispersing the xanthan
20 gum in water; and mixing in other hair cosmetic components.
21. A method of providing fixative properties to the hair comprising applying the composition of claim 1.
22. A method of providing curl retention under high humidity conditions comprising applying the composition of claim 1.
- 25 23. The composition of claim 1, wherein the composition is a surfactant-free hair mousse.
24. A hair cosmetic composition, wherein the fixative consists essentially of a xanthan gum and the high humidity curl retention is at least about 80%.

25. The composition of claim 24, wherein the composition is selected from the group consisting of a spray, a mousse, a hair lotion, a cream, a pomade, and a gel.
26. The composition of claim 25, wherein the composition is a gel.
27. The composition of claim 24 characterized by a viscosity of at least about 8000 cps,
5 and a turbidity of no more than about 100 NTU (Nephelometric Turbidity Units).
28. The composition of claim 24, wherein the composition is a surfactant-free hair mousse.